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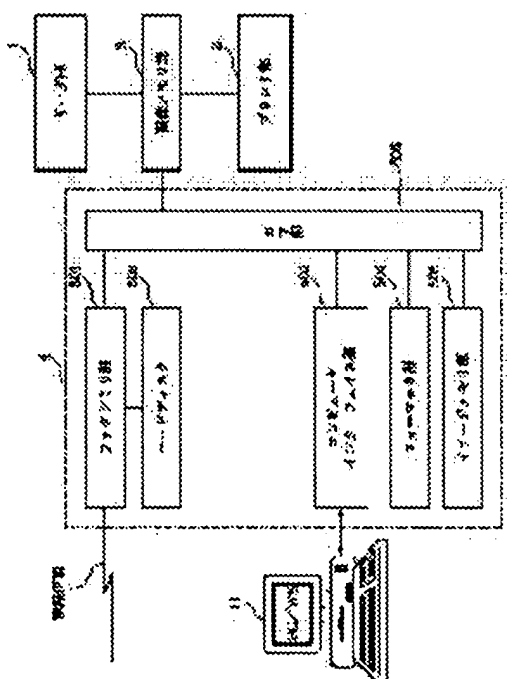
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(54) IMAGE FORMING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To facilitate forming images of sizes other than the standard size for an image forming device on sheets of Executive size.

SOLUTION: The image size of an image outputted from a computer 11 is determined to see whether or not it is the standard size for an image forming device (printer part 2). If the image size is the standard size when free size is set for a manual feed tray, this is reported to the user; when the image size is not the standard size but Executive size, printing action is started without reporting it.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the image formation equipment which forms an image on a sheet based on the inputted image data.

[0002]

[Description of the Prior Art] The copying machine which has the printer which processes the print job from two or more computers and print servers used as a client conventionally, and printer ability is known well.

[0003] Since the output of a request of a user may be differed from if printed out as it is when the image sizes of the image data inputted from the sheet size and the computer of the feed stage specified from the computer side differ, display the warning message of the purport from which size is different, and I make a user check, and have a user opt for subsequent processing in such a printer and a copying machine.

[0004]

[Problem(s) to be Solved by the Invention] However, at the detection and the setting up function of sheet size in a printer and a copying machine, there is little what covers all the sheet sizes currently used all over the world. Therefore, even if it sets the sheet of the image size of the image directed from the computer, a printer and copying machine side may be unable to recognize correctly. In that case, since the warning message by the above-mentioned size mismatching will surely be displayed, although the user set the sheet of right size and specifies the feed stage, the user may have been made to step on redundant work habits.

[0005] In consideration of the above point, this invention aims at preventing the redundant work habits to a user occurring as much as possible, when image formation equipment forms in a sheet the image of the size in which detection or a setup is impossible.

[0006]

[Means for Solving the Problem] In the image formation equipment which forms an image on a sheet in view of the above-mentioned problem based on the image data which inputted this invention An image size distinction means to distinguish the image size of the image data to input, A sheet receipt means to contain the sheet by which image formation is carried out, and a sheet sizing means to set the size of the sheet contained by said sheet receipt means as fixed form size or adjustable, Adjustable one is set up by said sheet sizing means, and when said image size is the fixed form size in said image formation equipment, it reports. Adjustable one is set up by said sheet sizing means, and when said image size is not the fixed form size in said image formation equipment, the image formation equipment characterized by having the information means which is not reported is offered.

[0007] Moreover, this invention is set to the image formation equipment which forms an image on a sheet based on the inputted image data. An image size distinction means to distinguish the image size of the image data to input, A sheet receipt means to contain the sheet by which image formation is carried out, and a sheet size detection means to detect the size of the sheet contained by said sheet receipt

means, It is the size which the image size distinguished by said image size distinction means can detect with said sheet size detection means. It reports, when the sheet size detected by said image size and said sheet size detection means is not the same. It is the size which the image size distinguished by said image size distinction means cannot detect with said sheet size detection means. When the sheet size detected by said image size and said sheet size detection means is not the same, the image formation equipment characterized by having the information means which is not reported is offered.

[0008] Moreover, this invention is set to the image formation equipment which forms an image on a sheet based on the inputted image data. An image size distinction means to distinguish the image size of the image data to input, A sheet receipt means to contain the sheet by which image formation is carried out, and a sheet size detection means to detect the size of the sheet contained by said sheet receipt means, It is the size which the image size detected by said image size distinction means can detect with said sheet size detection means. It reports, when the sheet size detected by said image size and said sheet size detection means is not the same. It is the size which the image size distinguished by said image size distinction means cannot detect with said sheet size detection means. The information means which the sheet size detected by said sheet size detection means can detect with said sheet size detection means, and it does not report in being the smallest size among larger sizes than said image size, The image formation equipment characterized by ****(ing) is offered.

[0009]

[Embodiment of the Invention] Drawing 1 is the sectional view showing an example of the image formation equipment in this invention, 100 is a body of image formation equipment, and 180 is an automatic manuscript feed gear (DF). In drawing 1, 101 is platen glass as a manuscript installation base, and 102 is a scanner and consists of a manuscript lighting lamp 103 and scan mirror 104 grade. The both-way scan of the scanner is carried out in the predetermined direction by the non-illustrated motor, a lens 108 is penetrated through the scan mirrors 104-106, and image formation of the reflected light of a manuscript is carried out to the CCD sensor 109. 120 is the exposure control section which consisted of laser, a polygon scanner, etc., is changed into an electrical signal in the image-sensors section 109, and irradiates the laser beam 129 modulated based on the picture signal with which the predetermined image processing mentioned later was performed at the photo conductor drum 110. The surroundings of the photo conductor drum 110 are equipped with the primary electrification machine 112, a development counter 121, the imprint electrification machine 118, cleaning equipment 116, and the pre-exposure lamp 114.

[0010] In the image formation section 126, after the photo conductor drum 110 is rotating in the direction of the arrow head shown in drawing by the non-illustrated motor and being charged in desired potential with the primary electrification vessel 112, the laser beam 129 from the exposure control section 120 is irradiated, and an electrostatic latent image is formed. The electrostatic latent image formed on the photo conductor drum 110 is developed by the development counter 121, and is visualized as a toner image. On the other hand, the sheet to which paper was fed with pickup rollers 133 and 134 from the upper case cassette 131 or the lower-berth cassette 132 is sent to a body with the feed rollers 135 and 136, an imprint belt is fed with the resist roller 137, and the visualized toner image is imprinted by the sheet with the imprint electrification vessel 118. A residual toner is cleaned by the cleaning device 116 and, as for the photo conductor drum after an imprint, residual charge is eliminated with the pre-exposure lamp 114. It dissociates from the imprint belt 130 and a toner image is re-charged with the electrification vessels 139 and 140 before fixing, and the sheet after an imprint is sent to a fixing assembly 141, and it is fixed to it by pressurization and heating, and it is discharged besides a body 100 with the discharge roller 142.

[0011] The body 100 is equipped with the paper deck 150 which can contain the sheet of 4000 sheets. The lifter 151 of the paper deck 150 goes up according to the amount of a sheet so that a sheet may always contact the feed roller 152. Moreover, the detachable tray 153 which can hold the sheet of 100 sheets is equipped. To the upper case cassette 131, the lower-berth cassette 132, and the paper deck 150, the size of the sheet to contain is detected by the sheet width-of-face detection sensor and sheet die-length detection sensor by the non-illustrated guide plate.

[0012] Detectable sizes are general fixed form sizes (example: A4, B5, LTR, etc.), and atypical size and special sizes (example: Executive etc.) cannot be detected. I display the list of the fixed form size which a detachable tray 153 detects width of face by the width-of-face detector style by the non-illustrated width-of-face guide, and serves as a candidate according to the detected width of face on a control unit 172, and have it set up whether the sheet of which fixed form size is set by the user. When the list of the fixed form size which serves as a candidate is displayed so that it may mention later, when the sheet set to the detachable tray 153 is not the fixed form size in this image formation equipment, it chooses and sets up adjustable one displayed on coincidence.

[0013] Furthermore, in drawing 1, 154 is a delivery flapper and changes the path by the side of double-sided record thru/or multiplex record, and delivery. The sheet sent out from the delivery roller 142 is changed to a double-sided record thru/or multiplex record side by this delivery flapper 154. Moreover, 158 is bottom conveyance pass, through the reversal pass 155, turns a sheet over and leads the sheet sent out from the delivery roller 142 to the re-medium tray 156. Moreover, 157 is a multiplex flapper which changes the path of double-sided record and multiplex record, and is led to the reversal pass 155 without a sheet by pushing this down leftward at the conveyance-under direct pass 158. 159 is a feed roller which feeds a sheet to the photo conductor drum 126 side through a path 160. 161 is a discharge roller which discharges the sheet which has been arranged near the delivery flapper 154 and changed to the discharge side by this delivery flapper 154 outside the plane.

[0014] At the time of double-sided record (double-sided copy) or multiplex record (multiplex copy), the delivery flapper 154 is raised up, and a sheet [finishing / a copy] is stored in the re-medium tray 156 through the conveyance pass 155 and 158. At this time, at the time of double-sided record, the multiplex flapper 157 is pushed down rightward, and the multiplex flapper 157 is pushed down leftward at the time of multiplex record. One sheet stored in the re-medium tray 156 is led at a time to the resist roller 137 of a body through a path 160 with the feed roller 159 from the bottom. When reversing and discharging a sheet from a body, after raising the delivery flapper 154 upwards, pushing down a flapper 157 rightward, conveying a sheet [finishing / a copy] to the conveyance pass 155 side and the back end of a sheet passing the 1st delivery roller 162, it conveys to a 2nd delivery roller side with the reversal roller 163, and with the discharge roller 161, a sheet is turned over and it is discharged outside the plane.

[0015] 190 is a delivery processor which arranges and files the sheet discharged from image formation equipment 100. In the control unit 172 mentioned later, when delivery bundle after-treatment actuation of a sort, a staple, etc. is not set up, it passes along the conveyance way 194, and it is discharged by the paper output tray 191 for every sheet without the processing tray 193. When delivery bundle after-treatment actuation is set up, it passes along the conveyance way 195, and the sheet discharged for every sheet is loaded and arranged on the processing tray 193. If discharge of a part of image formation is completed, the stipple of the sheet bundle will be carried out and it will discharge in a bundle to a paper output tray 191 or 192. Although bundle discharge is fundamentally carried out to a paper output tray 192 when delivery bundle after-treatment actuation is set up, control changed to a paper output tray 191 according to conditions, such as a loaded condition, is performed. Migration control is carried out up and down by the non-illustrated motor, and paper output trays 191 and 192 move so that the tray loaded before image formation actuation initiation may become the location of a processing tray.

[0016] Drawing 2 is a control-block Fig. in image formation equipment 100. 171 is CPU which performs basic control of image formation equipment 100, and the work piece RAM 175 and input/output port 173 for processing with ROM174 in which the control program was written are connected by the address bus and the data bus. The input (un-illustrating) of various loads (un-illustrating) which control image formation equipment 100, such as a motor and a clutch, the sensor which detects the location of paper is connected to input/output port 173. CPU171 controls sequential I/O through input/output port 173 according to the contents of ROM174, and performs image formation actuation. Moreover, the control unit 172 is connected to CPU171, and the display of a control unit 172 and the key input section are controlled. An operator directs an image formation mode of operation and the change of a display to CPU171 through the key input section, and CPU171 displays the condition of

image formation equipment 100, and a mode-of-operation setup by key input. The image-processing section 170 which processes the signal changed into the electrical signal in the image-sensors section 109, and the image memory section 3 which accumulates the processed image are connected to CPU171.

[0017] Next, according to drawing 3, detail of this image-processing section 170 is given. Drawing 3 is the block diagram of the image-processing section. The manuscript image by which image formation was carried out to the CCD sensor 109 through the lens 108 is inputted as data of monochrome brightness, and is changed into an analog electrical signal by the CCD sensor 109. After being inputted into the analog signal processing section (un-illustrating) and performing sample & hold, amendment of dark level, etc., analog-to-digital conversion (A/D conversion) of the changed image information is carried out in the A/D-conversion section 301, and it carries out the shading compensation (amendment of dispersion of the sensor which reads a manuscript, and the luminous-intensity-distribution property of the lamp for manuscript lighting) of the digitized signal. Then, it is sent to the log transducer 302. In the log transducer 302, LUT for changing the inputted brightness data into concentration data is stored, and brightness data are changed into concentration data by outputting the table value corresponding to the inputted data.

[0018] Then, variable power of the image is carried out to a desired scale factor by the variable power processing section 303, and it is inputted into gamma amendment section 304. In gamma amendment section 304, in case concentration data are outputted, conversion by LUT in consideration of the property of a printer is performed, and the output according to the concentration value set up by the control unit is adjusted. Then, it is sent to the binary-ized section 305. In the binary-ized section 305, the concentration data of a multiple value are made binary and a concentration value is set to "0" or "255." 8-bit image data is made binary, and is changed into the 1-bit image data of "0" or "1", and the image amount of data stored in memory becomes small.

[0019] However, if an image is made binary, since the number of gradation of an image will become 2 gradation from 256 gradation, when the image data with much halftone like a photograph is made binary, generally degradation of an image is remarkable [image data]. Then, it is necessary to carry out the false halftone expression by binary data. Here, an error diffusion method is used as the technique of performing a halftone expression in false by binary data. It is the approach of presupposing that it is concentration data of "255", when this approach is larger than a threshold value with the concentration of a certain image, and distributing to a surrounding pixel by making into an error signal difference of actual concentration data and the data made binary, after making it binary noting that it is concentration data of "0", when it is below a certain threshold value. Allocation with error multiplies the weighting factor on the matrix currently prepared beforehand to the error produced by binary-ization, and is performed by adding to a surrounding pixel. The concentration average in the whole image is saved by this, and halftone can be expressed with binary in false by it. The image data made binary is sent to the image memory section 3, and image storage is carried out. Moreover, since the image data from a computer inputted from the external I/F processing section 4 is processed as binary image data in the external I/F processing section, it is sent to the image memory section 3 as it is.

[0020] The image memory section 3 has high-speed page memory and the mass memory (hard disk) which can accumulate two or more page image data. Two or more image data stored in the hard disk is outputted in the sequence according to the edit mode specified by the control unit of image formation equipment 100. For example, in a sort, the image of the manuscript bundle read in DF180 is outputted in order. The image data of the once stored manuscript is read from a hard disk, and this is repeated two or more times and outputted. Thereby, the same role as a sorter with two or more bottles can be played. The image data outputted from the image memory section 3 is sent to the smoothing section 306 in the printer section 2. In the smoothing section 306, data are interpolated so that the end-of-line section of the image made binary may become smooth, and image data is outputted to the exposure control section 120. In the exposure control section 120, image data is formed in a sheet by the above-mentioned processing.

[0021] Next, detail of the image memory section 3 is given according to drawing 4. In the image

memory section, I/O of the image to the hard disk 404 which are the writing of the binary image from the external I/F processing section 4 and the image-processing section 170, image read-out in the printer section 2, and a mass store is accessed through the memory controller section 402 at the page memory section 401 which consists of memory, such as DRAM. The memory controller section 402 generates the DRAM refresh signal of the page memory 401, and arbitrates access to the image I/F processing section 4, the image-processing section 170, and the page memory 401 from a hard disk 404.

Furthermore, according to directions of CPU171, the write-in address to the page memory section 401, the read-out address from the page memory section 401, the read-out direction, etc. are controlled.

Thereby, CPU171 arranges by the ability ranking two or more manuscript images with the page memory section 401, and controls the function outputted to the printer section, the function which cuts down and outputs some images, and an image rotation function.

[0022] According to drawing 5, the configuration of the external I/F processing section 4 is described.

Through the image memory section 3, the external I/F processing section 4 incorporates the binary image data of the reader section in the external I/F processing section, and outputs the binary image data from external I/F to the printer section 2 through the image memory section 3, and performs image formation to the appearance mentioned above. In the external I/F processing section 4, it has the computer interface section 503 linked to the hard disk 502 which saves the communication link image data of the core section 506, the facsimile section 501, and the facsimile section, and an external computer 11, and the formatter section 504 and the image memory section 505.

[0023] The facsimile section 501 has connected with a public line through a modem (un-illustrating), and transmits reception of the facsimile commo data from a public line, and the facsimile commo data to a public line. In the facsimile section 501, it processes by saving the image for fax at the hard disk 502, such as carrying out facsimile transmission to the time amount specified [which is a facsimile function], or transmitting image data by inquiry of a partner to an assignment password. Facsimile transmission can be performed without using the reader section 1 and the image memory section 3 for a facsimile function by this, once transmitting an image to the facsimile section 501 and the hard disk 502 for facsimile through the image memory section 3 from the reader section 1.

[0024] The computer interface section 503 is the interface section which performs data communication with an external computer, and has a Local Area Network (the following, LAN), serial I/F, SCSI I/F, SENTORO I/F for the data inputs of a printer, etc. Through this I/F, the condition of the printer section and the reader section is notified to an external computer, or the image read in the reader section 1 with directions of a computer is transmitted to an external computer. Moreover, control command, such as print image data and an image size printing mode required in the case of an image print, is received from an external computer. Since the print data notified through the computer interface section 503 from an external computer are described by the printer code of dedication, the formatter section 504 changes the code into the raster image data which performs image formation in the printer section 2 through the image memory section 3.

[0025] The formatter section 504 develops a raster image data in the image memory section 505. The image memory section is used, when the image data sent from the image memory section 3 when the formatter section 504 uses it as memory which a raster image data develops and sends the image of the reader section to an external computer through the computer interface section 503 in this way (image scanner function) is once developed in the image memory section, it changes into the format of the data sent to an external computer and it sends out data from the computer interface section 503. The core section 506 carries out control management of the data transfer of each facsimile section 501, computer interface section 503, formatter section 504, image memory section 505, and image memory section 3 room. Thereby, even if two or more image output sections are in the external I/F processing section 4, even if the number of image transfer ways is one, it is controlled exclusively, a priority control is carried out also to that of management of the core section 506 to the image memory section 3, and an image output is performed.

[0026] Next, the control unit 172 which sets up copy actuation of the image formation equipment stated by drawing 1 is described according to drawing 6. In drawing 6, 621 is a power light which shows that

the power source is turned on. With the power switch of 613, 621 carries out lighting and putting out lights in accordance with the change of ON/OFF of a power source. 622 is a ten key and is used for the numerical input of a setup of image formation number of sheets, or mode setting. Moreover, on a facsimile setting screen, it is used for the input of the telephone number. 623 is a clear key and clears a setup inputted with the ten key. 616 is a reset key and is for returning the set-up modes, such as image formation number of sheets, a mode of operation, and a selection feeding stage, to a default.

[0027] 614 is a start key and starts image formation actuation by the depression of this start key 614. When there are the red which shows whether it can start or not, and LED (un-illustrating) of Green in the center of a start key 614 and a start is impossible, red LED lights up, and when it can start, LED of Green lights up. 615 is a stop key, and it is used in order to suspend copy actuation. 617 is a guide key, and if the depression of other keys is carried out after pressing this key, the symbol description which can be set up by that key will be displayed on a display panel. When canceling this guide display, the guide key 617 is again performed by carrying out a depression. 618 is a user setting key, and if the depression of this key is carried out, modification of a user will be attained in a setup of image formation equipment. Setup which a user can change is time amount until it clears a setup for example, on an automatic target, a setup of the default in the mode when pushing a reset key, etc. It is an interruption key, and if the depression of this key is carried out during image formation actuation, 619 stops other image formation actuation, and it can be copied without using the automatic manuscript feed gear 180. [0028] 620 is a display panel which consists of liquid crystal etc., and it changes the contents of a display according to setting mode so that it may make detailed mode setting easy. Moreover, the front face of a display panel is a touch sensor. The example of drawing 6 shows the example of the setting screen of a copy mode of operation. In drawing 6, the key of 624-631 is displayed in a display panel 620, the depression of a key is judged by touching the location of a display of this key, and the mode is set up. 627 is the selection key of a form stage, and if it carries out the depression of this key, it will perform the display which sets up whether feeding is performed from cassettes 131 and 132, the paper deck 150, or a detachable tray 153 to a display panel 620.

[0029] Detail explanation of a feed stage setting screen is given using drawing 7. (a) of drawing 7 is the screen after pressing the form selection key 627. (b) of drawing 7 is a screen showing being in the condition (condition which cannot be chosen) that it is [job] under activation and the form selection key 627 cannot push by half tone dot meshing.

[0030] There is no paper in a detachable tray 153, and the paper size of a detachable tray 153 expresses the indeterminate condition with (a) of drawing 7. (c) of drawing 7 is a screen which sets up the paper size and material of a detachable tray 153. This screen is expressed as the timing which set the sheet to the detachable tray 153. Size set to the detachable tray 153 using the adjustable key of 701 and each sizing key shown in 704 in this screen is set up. When setting the sheet of Executive size to a detachable tray 153, an adjustable key is pressed and it sets up adjustable one. Moreover, a postcard and sheet materials, such as OHP, can be set up using the key of 702 and 703. In this screen, the fixed form size which serves as a candidate according to the width-of-face detection in a detachable tray 153 is displayed in the selectable condition, and fixed form size which does not serve as a candidate is displayed in the selection impossible condition (half-tone-dot-meshing display). (d) of drawing 7 is drawing showing the condition of having set size as A4 in (c) of drawing 7, and having closed the detachable tray form setting screen of (c).

[0031] 628-631 are keys which set up the copy scale factor of copy actuation. 626 is the setting key in application mode, and if the depression of this key is carried out, the screen which application function modes, such as multiplex actuation, and a contraction layout mode, a cover, interleaving paper mode, set up will be displayed on a display panel, for example, the setting key of each application function mode like drawing 8 (a) will be indicated, and it will enable a setup in application mode. "car which performs a double-sided output from "piece-both the modes" in which 624 is the setting key of double-sided actuation, for example, a double-sided output is performed from an one side manuscript, and a double-sided manuscript -- "car which performs the one side output of two sheets from - both mode" and a double-sided manuscript -- three kinds of double-sided modes of piece mode [of -]" are set up. the

classification mode setting of the 625 is sort key and using setup [of the mode of operation of the delivery processor 190], and image memory output paper by the depression of this key -- it carries out. [0032] It means that the key cannot operate the display of the key in a display panel by making the line of a display into a dotted line (half tone dot meshing) when the mode of the key of a display other than the usual display cannot be set up. For example, drawing 8 (b) shows that carry out the difference in OHP and a setup in the mode is forbidden in an application mode setting screen. Moreover, in the example of drawing 6, the display of the contents to which copy actuation was set, and the present operating state are displayed above a display panel 620. Moreover, there is a display which shows which screen of each function mode which this display screen mentions later at the upper left of a screen it is, and the example of drawing 6 shows the setting screen of Copy A. In the example of drawing 6, although shown in written form, the notation which shows each may be used. Moreover, the operating state of other function modes later mentioned under the display panel 620 is displayed in the range which can be displayed by one line. the example of drawing 6 -- the output to the printer section of Copy B -- the working thing is shown. There is a key which can be changed beside the application mode key 626 in a display panel 620 by the user, and the key of the function which can be set up on the setting screen in application mode can be registered to a maximum of two. It can make it possible to set up the registered mode more easily by taking out and displaying the setting key in application mode on the location of drawing.

[0033] In drawing 6, 601-612 are the keys and LED displays for changing the display of a control unit, in order to set up each function of copy actuation and system behavior in which image formation equipment 100 was used. 601, 604, 607, and 610 are the key which changes each function, respectively. This key consists of translucent key carbon buttons, and there are display lamps (un-illustrating), such as LED, in the interior of a key. By carrying out the depression of these keys, selection of an actuation screen switches on a lamp in the key. Lighting control is carried out and only the lamp which this lamp inside each key has in the interior of the key of the actuation functional screen chosen is controlled to switch off the lamp inside other keys.

[0034] Moreover, LED of Green is arranged on the right of each key (603, 606, 609, 612), and this LED expresses the situation of each function of operation with lighting control of LED. For example, when putting-out-lights control of the copy B is carried out in standby and Copy B is output operating like the example of drawing 6, flashing control of LED606 of Copy B is carried out. Moreover, lighting control is carried out, when the image of Copy B is saved at the hard disk 304 of an image memory and print actuation of Copy B is not performed. It reads, and similarly, by LED609 of fax, if working, flashing control is carried out, and communication link working, print working, and when a fax image is in the facsimile section hard disk 402, lighting control is carried out.

[0035] LED of red is arranged on the left of each key (602, 605, 608, 611), and this LED means that the abnormality situation of each function occurred in lighting control of LED. For example, when abnormalities, such as paper-less interruption and JAM, occur [Copy B], flashing control of LED605 is carried out for LED605 of Copy B. At this time, the copy B function key 604 is pushed, by changing the display of a control unit to Copy B, the situation of Copy B is displayed on a display panel, and the detail of an abnormality situation can be checked. These functional change keys are not based on the situation of each function of operation, but a depression is possible for them always, and they are switchable in a control unit.

[0036] Like this gestalt, when a copy A function and a copy B function are switchable, keys other than the key in display panels, such as a stop key mentioned above, a start key, and a reset key, are operated to the function chosen by the functional change keys 601 and 604. For example, in the example of drawing 6, while displaying the copy A actuation screen, even if it pushes a stop key, copy actuation cannot be suspended to output actuation of Copy B. When suspending copy actuation of Copy B, it is after a depression carrying out the copy B function key 604, and carrying out the depression of the stop key 615, and the output of Copy B stops. Moreover, the data set up by the user setting key 618 have data in each screen on which the control unit of Copy A and Copy B is chosen, and can perform setting actuation independently in each screen.

[0037] Drawing 9 is a flow chart showing a control flow. The control of a print job which consists of the print image data and print control command which were inputted from the external computer 11 through the computer interface section 503 in step 1001 is started. In step 1002, the image size contained in the print control command received in the computer interface section 503 by step 1001 is distinguished.

[0038] The feed stage information included in the print control command received in the computer interface section 503 by step 1001 in step 1003 and the sheet size contained by the feed stage are detected. It is the information for specifying from any feed stage information shall feed paper to a sheet between the detachable tray 153 mentioned above, the upper case cassette 131, the lower-berth cassette 132, and the paper deck 150. It judges whether the sheet size detected at the image size distinguished at step 1002 in step 1004 and step 1003 is the same. When image size and sheet size are judged to be the same at step 1004, it progresses to step 1010 and print actuation is started.

[0039] When it is judged at step 1004 that sheet size is not the same as image size, in step 1005, it judges whether image size is the fixed form size which that it is the fixed form size in this image formation equipment, i.e., image size, can detect by the sheet size detector style of each feed stage. When image size is judged to be the fixed form size in this image formation equipment at step 1005, 1008 or less step [which is mentioned later] processing is performed.

[0040] When image size was not the fixed form size in this image formation equipment, i.e., it is judged at step 1005 that they are special sizes, such as custom size and Executive (executive), in step 1006, the size of sheet size and image size is compared and it judges whether the sheet size is larger. When it is judged at step 1006 that sheet size is not larger than image size, 1008 or less step [which is mentioned later] processing is performed.

[0041] When it is judged at step 1006 that sheet size is larger than image size, in step 1007, it judges whether the sheet size is the minimum size of the larger fixed form sizes than image size. For example, when image size is Executive (184x267 (mm)), it judges whether it is LTR (letter) (215.9 x 279.4 (mm)) of the minimum size of the fixed form sizes with the detected larger sheet size than Executive.

[0042] Although the sheet size detected as the distinguished image size in step 1010 is not the same when sheet size is judged to be the minimum size of the larger fixed form sizes than image size at step 1007, it is regarded as that to which the sheet of the same size as image size is set, and the warning display which shows that it is size mismatching starts print actuation, without carrying out.

[0043] When sheet size is judged not to be the minimum size of the larger fixed form sizes than image size at step 1007, it progresses to step 1008. In step 1008, since image size and sheet size are not the same, the warning display for making a user choose whether a print is started as it is or a feed stage is reset is displayed on a display panel 620.

[0044] It judges whether feed stage resetting of changing into the feed stage which starts a print or is different as it is with the user who looked at the warning display displayed on the display panel 620 at step 1008 in step 1009, or changing the size contained by the feed stage was performed. When it is judged that feed stage resetting is not performed at step 1009, it returns to processing of step 1008. When it is judged that feed stage resetting was performed at step 1009, print actuation is started based on the feed stage information and sheet size which it reset at step 1010.

[0045] Drawing 10 is a flow chart showing the control flow of the 2nd operation gestalt. Since step 1101 to the step 1103 is the same as step 1001 to the step 1003 of drawing 9, explanation is omitted.

[0046] It distinguishes whether adjustable one is set to the feed stage specified at step 1104. When the fixed form size in this image formation equipment is detected or set up, it progresses to step 1105, without progressing to step 1106 and setting up adjustable one, when adjustable one is set up at step 1104. In distinguishing whether sheet size is the same as image size and differing at step 1105, it progresses to step 1106. In step 1105, when sheet size is the same as image size, it progresses to step 1110 and print actuation is started.

[0047] The image size distinguished in step 1106 distinguishes whether it is the fixed form size in this image formation equipment. When image size was not fixed form size, i.e., it is judged at step 1106 that they are special sizes, such as custom size and Executive, it distinguishes whether adjustable one is set as the feed stage specified at step 1107. When adjustable one was set up in step 1107 and it

distinguishes, it is regarded as that to which the sheet of the same size as image size is set, and the warning display which shows that it is size mismatching starts print actuation, without carrying out. [0048] When the fixed form size in this image formation equipment is set up, it progresses to step 1108, without setting up adjustable one in step 1107. When it distinguishes that image size is fixed form size at step 1106, it progresses to step 1108. When it progresses to step 1108, image sizes are a time of being fixed form size and sheet size being set as adjustable, and a time of image size not being fixed form size, and sheet size being set as adjustable. In these cases, a warning display is performed to a user. Since the sheet of sizes other than the fixed form size in these image formation equipments, such as Executive, may be set when sheet size is especially set as adjustable, a warning display is performed in order to have a user check.

[0049] The warning display for making a user choose whether a print is started as it is or a feed stage is reset is expressed as step 1108 on a display panel 620. And it judges whether feed stage resetting of changing into the feed stage which starts a print or is different as it is with the user who looked at the warning display displayed on the display panel 620 at step 1108 in step 1109, or changing the size contained by the feed stage was performed. When it is judged that feed stage resetting is not performed at step 1109, it returns to processing of step 1108. When it is judged that feed stage resetting was performed at step 1109, print actuation is started based on the feed stage information and sheet size which it reset at step 1110.

[0050] Thus, since adjustable one is set as the specified feed stage, it reports when the distinguished image size is the fixed form size in this image formation equipment, and it checks to a user It can prevent being printed on the sheet of image size and different size, when possibility that the sheet of sizes other than fixed form size is set by other users is high. Since print actuation is started without reporting, when the image size which adjustable one is set as the specified feed stage and was distinguished is not the fixed form size in this image formation equipment When the possibility of the operation mistake by the user is low, the burden of actuation of a user can be mitigated.

[0051]

[Effect of the Invention] As explained above, according to invention according to claim 1, adjustable one is set up by the sheet sizing means. Since it reports when image size is the fixed form size in image formation equipment, adjustable one is set up by the sheet sizing means, and it does not report when image size is not the fixed form size in image formation equipment When possibility that the sheet of sizes other than fixed form size is set is high, it can prevent that image formation will be carried out to the sheet of image size and different size, and when the possibility of the operation mistake by the user is low, the burden of actuation of a user can be mitigated.

[0052] Moreover, according to invention according to claim 2, it is the size which the image size distinguished by the image size distinction means can detect with a sheet size detection means. It reports, when the sheet size detected by image size and the sheet size detection means is not the same. Since it does not report when the sheet size which the image size distinguished by the image size distinction means is size undetectable [with a sheet size detection means], and was detected by image size and the sheet size detection means is not the same While being able to prevent that image formation will be carried out to the sheet of image size and different size, when the sheet of size undetectable [with a sheet size detection means] may be set, the burden of actuation of a user can be mitigated.

[0053] Moreover, according to invention according to claim 3, it is the size which the image size detected by the image size distinction means can detect with said sheet size detection means. It reports, when the sheet size detected by image size and the sheet size detection means is not the same. It is the size which the image size distinguished by the image size distinction means cannot detect with a sheet size detection means. Since the sheet size detected by the sheet size detection means can detect with a sheet size detection means, and it does not report in being the smallest size among larger sizes than image size While being able to prevent that image formation will be carried out to the sheet of image size and different size, when possibility that the sheet of size undetectable [with a sheet size detection means] is set is high, the burden of actuation of a user can be mitigated.

[Translation done.]